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ABSTRACT

The report, which is part of a series, contains four papers concerning school-to-work transition issues and models. The first paper, "Secondary Special Education and Transition from School to Work" (F. Rusch and L. A. Phelps) reviews the economic, educational, and community adjustment difficulties of youth with handicaps in the context of historical antecedents and the U.S. Office of Special Education and Rehabilitative Services' Transition Initiative. The second paper, "A Multi-Level Perspective on Job Terminations for Adults with Handicaps" (C. Hanley-Maxwell, et al) calls for reframing the questions and advocates broader consideration to planning interventions at the individual, small group, organizational, institutional, and community levels. The third paper, "Introduction to Supported Work" (F. Rusch) presents an overview of the characteristics of the supported-work approach and offers recommendations for personnel preparation. The final paper, "The Ecology of the Workplace" (J. Chadsey-Rusch and F. Rusch) discusses three ecological dimensions (physical, social, and organization ecology) and their impact on job maintenance for persons with special needs, especially in relation to work performance skills and social interpersonal skills. (DB)

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School-To-Work Transition Issues and Models

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TRANSITION INSTITUTE AT ILLINOIS

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The following principles guide our research related to the education and employment of youth and adults with specialized education, training, employment, and adjustment needs.

- Individuals have a basic right to be educated and to work in the environment that least restricts their right to learn and interact with other students and persons who are not handicapped.
- Individuals with varied abilities, social backgrounds, aptitudes, and learning styles must have equal access and opportunity to engage in education and work, and life-long learning.
- Educational experiences must be planned, delivered, and evaluated based upon the unique abilities, social backgrounds, and learning styles of the individual.
- Agencies, organizations, and individuals from a broad array of disciplines and professional fields must effectively and systematically coordinate their efforts to meet individual education and employment needs.
- Individuals grow and mature throughout their lives requiring varying levels and types of educational and employment support.
- The capability of an individual to obtain and hold meaningful and productive employment is important to the individual's quality of life.
- Parents, advocates, and friends form a vitally important social network that is an instrumental aspect of education, transition to employment, and continuing employment.

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School-To-Work Transition Issues and Models

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Preface

This volume represents a collection of papers that relate to school-to-work transition issues and models. Three of the papers introduce issues and one discusses a popular, emerging model for preparing persons for employment.

The first paper, "Secondary special education and transition from school to work," reviews the economic, educational, and community adjustment difficulties of youth with handicaps in the context of historical antecedents and the U.S. Office of Special Education and Rehabilitative Services' Transition initiative.

The second paper, "A multi-level perspective on job terminations for adults with handicaps," introduces a multi-level viewpoint on job terminations for persons with handicapping conditions. The viewpoint suggested by this paper calls for reframing the questions and advocates broader consideration to planning interventions at the individual, small group, organizational, and institutional and community levels. Several suggestions for interventions at each level are presented.

The third paper "Introduction to supported work" discusses the concept of "supported work." An overview of the characteristics of the supported-work approach and the target populations served in supported work programs in the State of Illinois is presented. Additionally, recommendations for personnel preparation are offered.

The final paper, "The ecology of the workplace" discusses three ecological dimensions (physical, social, and organization ecology) and their impact on job maintenance for persons with special needs. These dimensions are discussed in relation to two basic skill groups crucial to job acquisition and maintenance: work performance skills and social-interpersonal skills.

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Secondary Special Education and Transition from School to Work

Frank R. Rusch

L. Allen Phelps

This paper was funded through the Office of Special Education Programs, Office of Special Education and Rehabilitative Services, U.S. Department of Education (contract number 300-85-0160).

Secondary Special Education and Transition from School to Work: A National Priority

Frank R. Rusch and L. Allen Phelps

Providing appropriate educational and employment opportunities for youth with handicaps has posed significant, long-standing problems for our nation's citizens, employers, policymakers, and educators. Over the past 15 years federal and state legislation has begun addressing the complexities of providing appropriate secondary education and transition services to our nation's youth. Indeed, the significant societal and personal costs associated with the unemployment and underemployment of these youth have raised the issue to the level of national priority. In all likelihood, employment will remain a national priority until considerably higher levels of employment, educational attainment, and successful community adjustment are realized.

The economic dimensions of unemployment are significant and pervasive among youth with handicaps. Of the approximately 300,000 youth who leave high school each year, the vast majority encounter severe unemployment and underemployment problems. Citing data obtained from a Harris telephone survey conducted in the Fall of 1985 with a cross-section of 1,000 persons with handicaps, aged 16 and over, results reported to the Senate Subcommittee on the Handicapped during the reauthorization hearing held on February 21, 1986 concluded that:

- 67 percent of all Americans with handicaps, between ages 16 and 64, are not working.
- If an individual is working that person is 75 percent more likely to be part-time employed.

- 67 percent of all those persons who are handicapped and not working say that they want to work.

Without question, youth and adults with handicaps suffer major economic disadvantages in the labor market in comparison to the non-disabled population. The extent to which such difficulties are due to employment conditions in the labor market, inadequate or inappropriate vocational and educational preparation, lack of transitional support services, or other related factors (e.g., employer attitudes, social welfare disincentives) is difficult to determine fully. Regardless of the cause, these conditions create major economic difficulties for our nation's taxpayers and individuals with handicaps. Depending on the severity of the disability, the annual costs borne by taxpayers for sheltered workshop programs, adult day care services, and income transfer programs that support unemployed persons can run as high as $12,000 annually (Phelps, Cobb, Larkin, & Blanchard, 1982; Walls, Zawlocki, & Dowler, in press). Alternatively, the economic benefits from placing and supporting individuals into competitive employment include a larger tax base, greater productivity capacity for the nation, and significant reductions in social costs (Copa, 1984; Rusch, in press; Wehman, Hill, Goodall, Cleveland, Brooke, & Pentecost, 1982).

National surveys have pointed out some of the problems and circumstances encountered by youth with handicaps during and following their enrollment in secondary schools. For example, High School and Beyond, a national longitudinal study of a representative sample of 30,000 sophomores and 28,000 seniors, was initiated in 1980 and included self-identified students with handicaps. For these students with mild handicaps, whether enrolled in special education or regular education, the

prospects for completing high school were generally bleak. Owings and Stocking (1985) reported:

- o 22 percent of the 1980 sophomores, as compared to 12 percent of the nonhandicapped students, had dropped out of school between their sophomore and senior years.
- o 45 percent of these sophomores were in the lowest quartile on combined vocabulary, reading, math, and science tests, compared to only 19 percent of the non-handicapped students.
- o only 29 percent were enrolled in vocational education programs.

Other recent investigations have cited the lack of appropriate vocational assessment during the schooling years, absence of career-related objectives and transitional plans in IEPs (Cobb & Phelps, 1983), and a lack of counseling and career planning services, parent involvement, comprehensive work experience programs for youth while in high school, and cooperative programming with vocational rehabilitation and other agencies to ensure a continuum of necessary support as youth exit from high school and enter employment as obstacles to employment (Rusch, Mithaug, & Flexer, in press).

Clearly, the need to broaden and strengthen the quality of educational experiences received by youth with handicaps in the transitional phase of their education is imperative. Without better preparation, the likelihood of improving their employment prospects and successful adjustment to living in their home communities will be minimal at best.

Historical Antecedents

The economic and educational difficulties faced by youth with handicaps are not new problems. Public concern for the ability of individuals with handicaps to pursue employment first arose during World

War I when thousands of American veterans who were physically disabled required assistance in returning to the workforce. In 1918, Congress enacted the first Vocational Rehabilitation Act to serve these veterans, as well as to initiate translation services for blind individuals. Federal legislation for vocational education also was enacted in 1917, however, no attention was paid to youth or adults with handicaps. Throughout the 1920s and 1930s a few programs designed to serve the unemployed (e.g., Civilian Conservation Corps) benefitted some youth with mild handicaps. The 1943 Amendments to the Vocational Rehabilitation Act expanded services, including rehabilitation counseling, to persons with mental retardation.

In the 1950s, work-study programs for youth with handicaps first emerged and later became the leading strategy in the public schools for preparing these youth for post-school employment (Brolin, 1976; Clark, 1976). In the work-study models proposed by Kolstoe and others, youth were provided with controlled, in-school work, followed by placement in specialized job placements in the community (cf. Miller, Ewing, & Phelps, 1980).

The Kennedy era marked the beginning of a period of considerable Federal interest and growth in special education, vocational education, and other programs designed to assist unemployed youth and adults with handicaps. The 1963 Civil Rights Act spurned a major focus on prohibiting discrimination in education, social services, and other federally-sponsored activities on the basis of race and national origin. In the mid 1970s nondiscrimination assurances were extended to individuals with handicaps. During the mid 1960s and early 1970s most states enacted legislation mandating that schools provide special education services to

all school-age youth. This was followed in 1975 by the landmark Federal legislation entitled the "Education for All Handicapped Children Act," which assured that children ages 3-21 with handicaps would receive a free and appropriate education. The Vocational Education Act of 1963 and its subsequent amendments in 1968 and 1976 sought to increase the participation of youth and adults in vocational programs by setting aside 10 percent of the funds for persons with handicaps. The most recent Carl D. Perkins Vocational Education Act of 1984 extends these efforts and mandates the delivery of assessment, support services, counseling, and transitional services for students who are identified as handicapped and disadvantaged.

The job training and employment programs enacted under the Comprehensive Employment and Training Act (CETA) and presently continuing under the Job Training Partnership Act (JTPA) are also focused upon serving the training needs of these individuals. Additionally, Congress enacted the Target Jobs Tax Credit program in the 1970s to provide tax incentives for employers who hire individuals referred through state vocational rehabilitation programs.

Despite these major federal and state efforts the educational and employment problems of youth with handicaps remained a major dilemma for policymakers, professionals, and others from a broad array of human service fields.

A Special Federal Initiative

In the 1983 Amendments to the Education of the Handicapped Act (EHA P.L. 98-199), Congress sought to address directly the major educational and employment transition difficulties encountered by these youth. Section 626 of P.L. 98-199, entitled "Secondary Education and Transitional

Services for Handicapped Youth," authorized the Office of Special Education and Rehabilitative Services (OSERS) to spend $6.6 million annually in grants and contracts intended to strengthen and coordinate education, training, and related services thereby assisting youth in the process of transition to postsecondary education, competitive employment, or adult services.

The major objectives of Section 626 are (a) to stimulate the improvement of programs for secondary special education and (b) to strengthen and coordinate education, training, and related services to assist in the transition process to postsecondary education, vocational training, competitive employment, continuing education, or adult services. To address these objectives, OSERS announced several grant programs in fiscal year 1984 and 1985: Service Demonstration Models (84.158A), Cooperative Models for Planning and Developing Transitional Services (84.158B and 84.158C), and Demonstrations in Post-Secondary Education (84.078B and 84.078C). Table 1 overviews these competitions. Special Education Programs awarded 17 grants under the Service Demonstration Models, 29 grants under the Cooperative Models for Planning and Developing Transitional Services, and 31 Demonstrations in Post-Secondary Education.

In addition to the model demonstration grants awarded under Section 626, Special Education Programs awarded 12 Youth Employment Projects (84.023D) and 15 Postsecondary Projects (84.023G) under the Handicapped Children's Model Program (authorized under Section 641-642 of EHA). Also in fiscal year 1984, Rehabilitation Services Administration awarded five grants for "Transition from School or Institution to Work Projects" under the Special Projects and Demonstration for Disabled Individuals program

Table 1. Grant programs that have been awarded since P.L. 98-199 was enacted in 1984.

Authorizing Legislation	Grant Program	Fiscal Year	Number of Grant Awards
Section 6262 of P.L. 98-199, Education of the Handicapped Act, 1983 Amendments	Secondary Education and Transitional Services for Handicapped Youth: Service Demonstration Projects (84.158A)	1984	17
	Secondary Education and Transitional Services for Handicapped Youth: Cooperative Models for Planning and Developing Transitional Services (84.158B and 84.158C)	1984	29
	Post-Secondary Educational Programs for Handicapped Persons: Demonstrations (84.078B and 84.078C)	1984	31
Section 641-642 of P.L. 98-199, Part E of the Education of the Handicapped Act (20 USC 1441-1442)	Handicapped Children's Model Program: Youth Employment Projects (84.023D)	1984	12
	Handicapped Children's Model Program: Post-Secondary Projects (84.023G)	1984	15
Section 311 (A) (1) of P.L. 93-112 Rehabilitation Act of 1973, as amended	Rehabilitation Services: Special Project (84.128A)	1984	5

(authorized by Section 311 of P.L. 93-112). All of these model demonstration projects are funded for two or three years, although a few projects are funded for a 12-month period. Leadership in launching the Secondary Education and Transitional Services initiative was provided by Madeline C. Will, the Assistant Secretary for Special Education and Rehabilitative Services, and is outlined in her seminal paper entitled "Bridges from School to Working Life" (Will, 1984).

Institute Formed

As part of the Secondary Education and Transitional Services for Handicapped Youth initiative, the University of Illinois at Urbana-Champaign was contracted in August of 1985 to assist in evaluating and extending the impact of the federal initiative. The recently formed Secondary Transition Intervention Effectiveness Institute at the University of Illinois will be studying the issues and problems related to the secondary education and transitional services of persons with handicaps through 1990 (Rusch & Phelps, 1985). This group has adopted a conceptual model for School-to- Work Transition, which addresses many of the concerns raised above.

Within this model, transition is viewed as the intermediate phase of the school-to-work continuum. The activities that occur during transition relate to educational programs and transitional services provided jointly by personnel from the school and the employment sectors of the community, respectively. To be maximally effective, we assume that assessment, training, and job placement activities that occur during this transition period be jointly planned, implemented, and evaluated by special and vocational educators, guidance counselors, social workers, rehabilitation personnel, JTPA personnel, parents and advocates, and

co-workers and supervisors from various businesses and industries within the community.

Additionally, the period of transition in this model generally can be viewed as longer or shorter depending upon the severity of the educational and employment problems encountered by youth. Generally, the degree of overlap in education and services is greater for youth with severe handicaps than for youth with mild handicaps. For individuals with severe handicaps the period of assessment, instruction/training, and placement support may require a period of several years of extensive support, which probably will not be the case for youth with mild handicaps.

Institute Approach

The mission of the Transition Institute at Illinois is threefold. It addresses a series of inter-related applied research, program evaluation, and evaluation technical assistance needs related to secondary education and transitional services. The Research Program has adopted a multi-leveled approach to direct its activities. This approach contends that problems experienced by youth are a reflection of broader systems' problems. Consequently, these problems require that the Transition Institute seek solutions at varying levels within the broader system, including: the individual level, the small-group level, the community level, and the societal level.

At the individual level, interventions are person-centered and are directed toward ameliorating the problems of targeted youth, e.g., social skill problems and problems with generalization and independence. Problems that occur at the small-group level are seen as emanating from difficulties that occur with primary support groups, such as the family and coworkers, and thus interventions are aimed at changing the group's

behavior rather than the individual's behavior. At the community level, problems are viewed as the failure of organizations (e.g., the media, unions, employers) to implement socially-desirable values and goals, and consequently, interventions are focused upon changing the organizations themselves. The fourth and final level is directed toward changing "institutions" (e.g., governmental organizations, legislation, rules and regulations) with regard to social policy and economics.

In the Evaluation Research Program, one of the five major activities is to collect and summarize information about the model programs funded under the Secondary Education and Transition Services' initiative through FY 1990. Descriptive data from a variety of sources are being collected annually on programs and projects receiving funding form the transition initiative (see Table 1).

The second activity focuses upon a series of analyses that compare target audiences, objectives, and program progress. These analyses involve aggregating findings of each model program that share common characteristics to allow statements to be made that relate to a particular model's effectiveness (e.g., the effect of providing long-term follow-up services after placement on a job, the effect of placement rates in communities where interagency cooperation exists versus in communities where such cooperation is limited or nonexistent).

A third major activity of the Evaluation Research Program is to identify appropriate instruments and procedures for assessing the entering and exiting skills of students. The fourth major task entails examining educational, employment, and independent living outcomes attained by students with handicaps at the national, state, and local levels.

The final objective of the Evaluation Research Program focuses on evaluation methodology. The program will review basic evaluation issues and alternative paradigms, as well as strengthen the responsiveness and utilization of evaluation results to ensure program growth and continuity.

The third component of the Transition Institute, the Evaluation Technical Assistance Program, provides technical assistance on evaluation methods to the federally-funded secondary and transition model demonstration projects. Technical assistance staff conduct a needs assessment of each funded model program and assist in developing appropriate evaluation strategies to ensure that project directors are able to make statements about project effectiveness.

Summary

Although several million individuals with handicaps in this country are denied, for various reasons, the opportunity to engage in meaningful employment, these individuals do possess the potential to live and work in the community. These individuals have been the focus of attention by special educators, vocational educators, vocational rehabilitation personnel, adult service agencies, and many other agencies and organizations for the past three decades. Unfortunately, individuals who are mentally retarded, physically disabled, and/or otherwise disabled, often have not made a successful transition into the community. Most of them either work in sheltered settings, are underemployed, or are unemployed and live with family, relatives, or friends without much hope of participating in their community in the manner most nondisabled persons participate. There is considerable evidence to suggest that these youth will not make any major gains in the world of work unless there is a concentrated effort to identify and introduce interventions that will lead

to their employment. Focusing upon transition from school-to-work, as a national priority, will begin to impact upon efforts to employ youth with handicaps who are conspicuously absent from the workplace.

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A Multi-Level Perspective on Job Terminations for Adults with Handicaps

Cheryl Hanley-Maxwell

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Julian Rappaport

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A Multi-Level Perspective on Job Terminations for Adults with Handicaps

Cheryl Hanley-Maxwell, Frank R. Rusch, and Julian Rappaport

Research and training programs over the past few years have demonstrated that competitive employment is a realistic goal for persons with handicaps. Indeed, when provided with the proper structures and supports these persons have benefited greatly form participation in the workplace. Despite the fact that we have made great progress in this area, many individuals do not achieve full participation in employment settings. This article focuses upon a variety of approaches to employment of persons with handicaps. The primary contribution of the paper is in its re-examination of job loss from a multidimensional perspective. Our conception draws attention away from "client-blaming" and forces considerations that are more complex in nature, including a focus on more than one level of analysis. We also present several suggestions for intervention, making use of this multi-level approach.

Research on Factors Related to Work Performance

Early studies examining employability centered on individual difference variables to distinguish successful and unsuccessful groups (e.g., handicapped versus nonhandicapped individuals as well as between handicapped individuals). Variables such as IQ (Kolstoe, 1961; Reynolds & Stunkard, 1960; Shafter, 1957), age (Kolstoe, 1961; Neff, 1959; Shafter, 1957), years of school and academic achievement (Kolstoe, 1961; Shafter, 1957), and home influence (Neff, 1959; Shafter, 1957) have been examined with limited success; none of these variables predicted consistent or significant differences between individuals who were considered

successful in job placements, and those considered unsuccessful (Rusch, Schutz, & Heal, 1983).

More recent studies have sought to identify problems related to work performance that may lead to job terminations. For example, Lagomarcino and Rusch (in press) reviewed nine studies examining factors that were thought to contribute to reasons for job terminations of adults with handicaps. All of the studies they reviewed identified deviant behavior as a major area of concern. The second most frequent area was inappropriate interactions with supervisors and coworkers (indicated in seven studies). Several studies described extreme dependence on supervision as a problem area, and a few studies indicated problems in the areas of production, personal appearance, attendance or tardiness, transportation, and supervision.

Lagomarcino and Rusch also compared the nine studies to the focus of applied research conducted with adults with handicaps in competitive employment settings. They found that of the fifteen studies they reviewed, seven studies published in the applied literature sought to decrease inappropriate interactions with supervisors and coworkers. Three studies sought to increase speed and/or accuracy of work (i.e., production). An equal number sought to increase production and to decrease dependence on supervision. Two studies were concerned with decreasing dependence on supervision. In all cases, the studies reviewed dealt exclusively with changing the behavior of the adult with handicaps. Although some teaching procedures included the use of coworkers, the focus of the research was clearly directed toward the employee with handicaps, rather than, for example the system(s) in which the target employee worked. Interestingly, Greenspan and Shoultz (1981) suggested that suc-

cess in competitive employment relates to the *individual*'s ability to minimize being viewed as "deviant," and to maintain a certain degree of "social invisibility."

The view expressed by Greenspan and Shoultz, while not illogical, looks at interactions in a unidimensional manner. This view directs intervention to only one individual. Not surprisingly, the target of the planned interventions is the person with handicaps. The next section introduces a broader, multidimensional conception of the problem.

Reframing The Problem

Persistent problems such as job terminations of individuals with handicaps often defy novel solutions. One major reason for this may be the way the problem is posed and solutions to those problems are derived. Once a problem is selected and decisions are made as to what will be asked about it, the methods of investigation and the solutions derived are predetermined (Seidman & Rappaport, 1986). The choices have been made in the social construction of reality. Certain premises frequently appear in the investigation of social problems, including employment attrition. These include: (a) causal attribution bias and victim blaming, (b) use of a single standard or small number of standards that are morally viewed, (c) generalization from extreme examples, and (d) looking for uniform solutions to a problem or "the solution" to a complex problem.

The premise of attribution bias or victim-blaming (i.e., viewing the target person as the sole cause of their own problem) is especially prevalent in the literature on factors related to employment attrition of adults with handicaps. This premise rejects the individual who is unable to become invisible and maintains that the individual is the problem. All interventions must then be focused on this person. Typically, no effort

is made to alter the view of potential peers, coworkers, or society (Rappaport, 1977). The focus that the individual alone must change to conform with pre-existing standards has been questioned by Triandis (1976) in the context of minority employment. He suggested that employment training may also be viewed from a perspective that requires adjustments by supervisors. The perspective that stresses changing only the individual with handicaps has also been challenged by Rusch, Chadsey, White, and Gifford (1985) who stress the need for cross-cultural community integration. They propose that handicapped and nonhandicapped individuals be united "as equal members jointly participating in . . . employment settings. (Integrated employment is defined by the forumlation of a cohesive network of people and resources, which is linked together by common expectations and shared interests" (p. 120). Adoption of this perspective requires that problem definitions not be formed before time, place, and context are examined, which defines the ecological viewpoint (Rappaport, 1977; Rusch & Mithaug, 1985; Seidman & Rappaport, 1986).

Karan and Berger (in press) suggest that when a good match exists between people and their environments, job retention is likely. They contend that the problems (mostly social-interpersonal) experienced by the individual with handicaps in employment settings are a reflection of the individual's interaction with the setting and with other persons present in that setting. Consequently, solutions should reflect consideration of the employment context. These solutions are then most appropriately examined at the points at which the target employee is influenced by his or her ecology. Such an examination should result in the formulation of interventions that are multidimensional or multi-level. For example, interventions might be viewed at the individual level, the small group

level, the organizational or systems-centered level, and the institutional (social) and community level (Rappaport, 1977). Our thesis is that if we focus upon varying levels of potential intervention, we also focus on varying levels of potential solutions. Thus, awareness of all levels should be developed with attention to both within level influence and across level influence (Rappaport, 1977). The following sections address each of these levels and recommend possible solutions or areas in need of further investigation in the context of employment.

Individual Level

Change at the individual level is based on person-centered strategies and tactics of intervention with the individual seen as deviant, unable to fit into existing social structures (Rappaport, 1977). Problems that exist within the individual are typically sought for elimination or amelioration. All of the studies reviewed by Lagomarcino and Rusch (in press) were found to relate to the individual level of analysis. The interventions vary form study to study, including the use of traditional behavior management strategies, coworker-administered treatment interventions, and self-instructional procedures (cf. Rusch, Martin, & White, 1985).

A few studies also addressed the interpersonal problems experienced by employees with handicaps by including a social skills component in the planned intervention (Rusch, Schutz, & Agran, 1982; Schutz & Rusch, 1982; Stanford & Wehman, 1982). These interventions dealt with part of the problem, but posed a unidimensional view of interpersonal interaction failures. Some authors have attempted to deal with this by incorporating significant others as change agents (Rogers-Warren & Warren, 1977; Rusch & Schutz, 1981; Rusch, Schutz, & Heal, 1983; Schoggen, 1978; Shafer, in press). However, the focus of change remains the same, the target em-

ployee (Karan & Berger, in press). Karan and Berger (in press) expressed concern about limiting the focus of behavior change to only one of the participants involved in the integration process. They recommended devising interventions that deal with target employees at the small group level.

While we do not solely recommend the continued targeting of the individual as the focus of intervention, there are some strategies that should be explored. We recommend, for example, that individuals with handicaps be taught to utilize self-advocacy techniques that allow these persons to control their own behavior or to problem-solve. The target of the intervention is the individual, but the interventions suggested enhance the control that the individual exerts over the environment. These procedures, coupled with interventions at the three remaining higher levels, would facilitate the accommodation of these persons in existing nonsegregated employment options.

Small Group Level

The small group level maintains that social problems are created by interpersonal difficulties within primary groups, such as the family or work groups. Problems are identified at the group level rather than limited to any one of its members (Rappaport, 1977). Problems are resolved by introducing interventions directed toward existing social support networks. Social support networks refer to "emotional, informational, and material support that is provided by friends, relatives, neighbors, service provides, and others with whom (the target employee) has an ongoing relationship, and to whom one can turn in times of need or crisis" (O'Connor, 1983, p. 187).

Karan and Berger (in press) and O'Connor (1983) cite several studies highlighting the importance of social support in everyday life. These studies indicate that social support appears to be related to stress reduction, improved mental health, and better prognosis for physical health problems. Furthermore, they describe a growing body of literature that acknowledges the importance of social support as a factor in the successful community adjustment of persons with handicaps.

Unfortunately, researchers and service providers rarely consider the social support networks when addressing problems associated with persons who are handicapped. Indeed, the general lack of recognition, as well as appreciation, of the friendships that adults with handicaps form in their lives attests to our general disregard of the importance of social networks. For example, many newly formed community-based residential alternatives are implemented with total ignorance of the impact they have on existing friendships, and other social support networks. O'Connor (1983) suggested that residential goals be reexamined in light of the isolating effect "placement in the least restrictive setting" may have on the lives of these persons.

While O'Connor (1983) takes a dim view of the likelihood of getting nonhandicapped individuals to welcome or even tolerate adults with handicaps in their social circles, Karan and Berger (in press) take a more optimistic view in regard to work settings. They suggest that a majority of the literature indicates that generally indifferent attitudes exist on the part of nonhandicapped coworkers towards the employment of mentally retarded workers into the work sites of those coworkers. In fact, a growing body of literature supports the contention that coworkers accept adults with handicaps (White & Rusch, 1983).

Suggestions for promoting the acceptance of adults with handicaps include utilizing coworkers as advocates to ensure fair assignment of job tasks, discourage practical jokes, serve as mediator in any confrontations, and facilitate communication (Shafer, in press); and an awareness model described by Karan and Berger (in press) that is intended to "raise the consciousness of those who interact with the (employee with handicaps)." Additionally, Karan and Berger (in press) make five suggestions for improving social support networks for target employees who are competitively employed, including: (a) identifying key people to serve as advocates; (b) assisting the target employee, coworkers, and supervisors, to improve interactions within the work environment; (c) assessing proximate and distant events and settings that may influence the employee's ability to function on the job; (d) ensuring the sharing of responsibility for any needed behaivor change programs by the target employee and coworkers; and (e) ensuring that there are support systems operating in the lives of those individuals who are expected to support the adult with handicaps (i.e., friends, family, acquaintances).

Organizational and Systems-Centered Level

An organizational or systems-centered analysis focuses upon organizational failure to implement socially-desirable values and goals; the problems are within the organizations themselves (Rappaport, 1977). Several interventions have been recommended for alleviating problems at the organizational and systems-centered level. Strategies that have been recommended include: flexible work schedules to highlight individual capability, job sharing, job redesign, and the use of architecture to foster positive psychological effects (Moos & Lemke, 1983).

Utilizing alternative work patterns may facilitate success on the job. McMahon and Bartley (1981) suggested that for several reasons (e.g., transportation difficulties, health and stamina, skill demands) many individuals with handicaps are unable to work traditional work hours. To accommodate this problem, two alternative work patterns were recommended: flextime and permanent part-time employment. Flextime allows employees more control over the hours they work. Although there is usually a set amount of core hours that must be maintained to complete the work assignment(s), beginning and ending times are flexible. Studies examining the use of flextime have noted improved morale and productivity, and reduced absenteeism, tardiness, and turnover (McMahon & Bartley, 1981). Additionally, flexible scheduling allows workers to better meet unique transportation needs (e.g., bus scheduling), health needs (e.g., catherization times, medical appointments, counseling sessions), educational needs (e.g., speech, occupational and physical therapies, community skills training), and leisure needs. Finally, flextime allows the worker time to develop social-interpersonal networks outside the work environment.

Permanent part-time employment is employment carried out in less than eight hours per day or 40 hours per week. Seventy-five percent of the part-time workforce in the United States work partial days five days a week (McMahon & Bartley, 1981). There are numerous variations available. Job-sharing relates to part-time employment and is particularly attractive when dealing with job options for employees with handicaps. Job-sharing allows a full-time position to be restructured into two or more part-time jobs. These part-time jobs may be worked as consecutive shifts or as concurrent shifts in which two employees, for example, collaborate on meeting the responsibilities of the job while working shorter hours.

Another variation of job sharing includes sharing the responsibilities of the job as well as sharing the salary and benefits.

Careful job analysis and job redesign are often critical to the employment success of the individual with handicaps. Wershing (1984) cited the need to critically analyze requirements for job performance and compare these with the capabilities of the individual with handicaps. She suggested the use of Available Motions Inventory (Bates, 1981; Cerebral Palsy Research Foundation of Kansas, 1980) as a method of analysis. Additionally, she cited a variety of studies that investigated the effects that particular job modifications have had on performance.

Architectural design can have a variety of psychological effects on behavior and learning. When designing an environment, an architect typically considers the habitability of that environment, e.g., health and safety, functionality, and efficiency, and psychological comfort and satisfaction (Preiser & Taylor, 1983). The design of work places should not emphasize one dimension of habitability to the exclusion of another. Special attention should be given to the psychological effects that lighting, color, space, density, form, and noise, may have on the employee performance. These factors have been frequently addressed in industry, but have rarely been addressed in relation to their effect on employees with handicaps.

Each of these alternatives have their advantages. The first two may facilitate better job performance through a combination of shorter work hours and allocation of tasks based on ability. The third variation may open job opportunities that previously have been unavailable due to one person's inability to perform tasks associated with the job. Job sharing allows service providers to mix and match individuals to accomplish job

tasks that highlight the competencies of each of the individuals rather than their incompetencies. All instances of job sharing often reduce the need for job restructuring or modification. Architectural design has not been fully studied and may have new effects on performance.

Institutional and Community Level

The institutional and community level of analysis embraces the philosophy that "social problems are created by our institutions rather than by persons, groups, or specific organizations" (Rappaport, 1977, p. 162). Permanent change will occur only if culture, expectations, attitudes, values, goals, social policy, economics, and politics are changed (Rappaport, 1977). Two methods used to obtain institutional or community change are advocacy and grassroots political action.

Advocacy. Advocacy focuses on the failures of institutions that produce or aggravate the problems experienced by the individual. This level of analysis asserts that we examine the interrelationship between individuals and social, political, legal, and economic influences (Knitzer, 1980). Advocates will have to act at both the individual and class levels. At the individual level, advocates may have to ensure the enforcement of affirmative action in hiring, promotion, and termination of target employees. Additionally, employees with handicaps should be educated as to their rights and obligations in the workplace. Target employees should be assisted in securing their rights, and advocating for the application of their rights on their own behalf. They should be encouraged to join unions and taught how to secure the services of the union at times of need or crisis.

Four types of class advocacy (i.e., legislative, administrative, legal, and monitoring) are used to shape public policy through investigative research, publicity, coalition and constituency building, and litigation (Knitzer, 1980). A primary concern of class advocacy is the removal of disincentives in the community sector. Loss of Supplemental Security Income and Medicare benefits at minimal income levels, for example, often decreases the desire of persons with handicaps and/or the family of the target employee to actively seek employment in the competitive sector (cf. Rusch et al., 1985). Disincentives must be removed or graduated assistance must be provided on the basis of more relevant criteria than minimal income level (e.g., number of months or years employed, availability of employer provided benefits that are adequate enough to meet existing and potential needs). At the present time, class advocacy should be directed toward revising current legislation related to income maintenance programs.

Grassroots political action. Grassroots political action often results in organizing employees with handicaps into cohesive groups, capable of making their needs and desires known. One organization whose development and structure serves as a model is the Association of Community Organizations for Reform Now (ACORN). Each ACORN affiliate is locally based and financed. However, the organizers are professionals trained as change agents. Organizers identify and magnify local issues that are used as the rallying point for the start of the grassroots movement. Additionally, loose coalitions are formed with different organizations to advance common concerns or exchange information (Doyle, Wilcox, & Repucci, 1983). The impact of this type of grassroots movement

for employees with handicaps should be felt in places such as local small business associations and unions.

Grassroots advocacy groups include adults with handicaps, and their families, friends, and advocates. These groups demand social policy changes at local levels that will result in more jobs and job redesign that will accommodate the needs of employees with handicaps and encourage increased hiring considerations. Locally, specific incentives (e.g., low-cost or guaranteed loans, training of the workforce, tax concessions) could be offered to increase the general availability of jobs (Levin, 1983). Such programs would benefit all potential workers, not just those with handicaps. However, the availability of these programs should be tied to hiring persons with handicaps as well as persons who are not handicapped. The grassroots groups should develop and implement organized informational campaigns designed to re-educate the general populas regarding the competencies and assets of this group of people. Businesses that employ and retain workers should be rewarded through the use of favorable publicity, while businesses that fail to employ or retain workers with handicaps for arbitrary reasons should be publicly acknowledged. Similar to other minority groups, persons with handicaps and their advocates should consider proactive campaigns to ensure their rights at both the local and national level.

Campaigns at the national level should seek to redistribute federal monies from income maintenance programs (i.e., Title XIX, Title XX) to more normative, community-based programs that emphasize independent functioning through ongoing support services. Additionally, they should advocate for increased tax incentives for businesses that employ workers with handicaps and/or provide architectural and/or job modifications that

increase the potential for success. Levin (1983) suggested four indirect interventions designed to increase the general availability of jobs to all sectors of the population, and to increase the overall quality of those available jobs. These intervention included: economic growth, greater labor intensiveness in production, training and wage subsidies, and persuasion. Although these interventions are directed at the general population, they have direct applicability to those workers with handicaps.

Economic growth and the pattern of this growth are critical factors in the number and type of jobs available. Levin recommended the expansion of government revenues through increased economic activity. Policies such as deficit spending and low interest rates lead to increased economic activity. Expansion of jobs that produce civilian goods as opposed to military spending will produce more jobs. However, expansionary efforts must be directed at labor intensive production or the net effect may be a loss in the total number of available jobs. Incentives that decrease the cost of labor relative to capital should be advocated. Such incentives will require the restructuring of the present system of taxation (Levin, 1983).

A healthy, labor-intensive economy will mean more available jobs to all. More available jobs means more employment opportunities for persons with handicaps. In their efforts to obtain more and better employment for adults with handicaps, advocacy groups must not ignore the larger picture in which they operate. They must join with other advocacy groups to demand economic growth and employment policies that will benefit all workers.

Summary

This paper introduced a multi-level analysis approach examining factors related to job terminations of workers with handicaps. One of the major outcomes of this analysis is the recognition that existing, published reports have almost exclusively focused upon changing the behavior of the employee with handicaps. Our viewpoint suggests broader consideration be given to planned interventions at several levels of analysis. Four levels were examined including the individual, small group, organizational or systems-centered, and institutional and community. Interventions were reviewed and proposals for new interventions were made at each level. In general, interventions occur within the first three levels of analysis. The fourth level (institutional and community) remains relatively untapped by social change advocates.

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Introduction to Supported Work

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Introduction to Supported Work

Frank R. Rusch

The purpose of this paper is to introduce supported work. Supported work is a relatively new term and relates to the use of new, improved "best practices" that have been shown to be effective in our efforts to competitively employ persons with severe disabilities.[1] The term "supported work" was first used by Kraus and MacEachron (1982) and has since been adopted to describe the process of securing employment for persons with handicaps whose potential for employment is often considered nill. Supported work embraces contemporary ideology that conflicts with current efforts to "provide services" without considerations to the social value of those services. Because there is always the possibility that 'there is nothing new under the sun' and that service providers have been providing similar support but under a different heading for 20 years, the first section of this paper concentrates on what is new and different about supported work; the second section provides an overview of the characteristics of the supported-work approach, the target populations that have been exposed to supported work programs offered by a local provider in the State of Illinois, and the staffing and funding patterns that have been used by the Illinois program. The final section of this paper offers recommendations for personnel preparation.

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[1]Throughout this paper terms such as 'severe disabilities,' 'disabilities,' 'handicaps,' and others including 'mental retardation' will be used. The supported-work approach has been shown to be particularly effective with individuals with disabilities, handicaps, mental retardation, and severe handicaps/disabilities and who are distinguished by their absence in the workplace. Thus, no effort will be made to use one term over another.

Is There Something New Under the Sun?

Evidence from a variety of studies suggests that many persons with handicaps--even severe handicaps--are achieving some degree of independence because of earned income. Yet, the handicapped population continues to be underrepresented in competitive employment. Failure to attain full employment potential stems from a variety of sources, ranging from population characteristics and types of services provided to the state of economy and ideology. Overwhelming data suggest that rehabilitation agencies, the primary vehicles for providing services to individuals with handicaps, have been ineffective in preparing these clients for meaningful employment. Based upon recent census figures as many as 80 percent of all persons with a disability are unemployed. Research at the University of Illinois, spanning a 15-year period, suggest that almost all persons with handicaps are either unemployed or underemployed. Meaningful employment, which refers to employment in integrated settings whereby all employees work for mutual outcomes (production of needed services or valued goods for monetary rewards), seems to escape these persons.

Traditional approach to rehabilitation services. Examination of the procedures used by the sheltered workshop, the predominant setting for vocational training of mentally retarded persons, can help to explain why few persons with disabilities attain their employment potential. Upon referral to a local rehabilitation facility, an individual is typically evaluated for 90 to 120 days to determine his/her work potential (Menchetti, Rusch, & Owens, 1983). Based upon this evaluation, the individual is either placed into work activity, extended sheltered employment, or transitional employment programs. Individuals whose

production rate is 25 percent that of the normal workforce qualify for work activity or adult day training programs.

Work activity or adult day training refers to day programs where between 20 to 60 individuals with handicaps spend their day performing activities that bar little if any relation to employment (e.g., coloring, dressing a doll, sitting quietly). Few of these programs offer employment training or wages; most programs focus their training efforts on leisure activities such as arts and crafts. If wages are offered, they are generally quite low (i.e., less that $300.00 a year).

Extended sheltered employment is available to individuals whose production rate exceeds that of those in work activity or adult day training programs, but who are believed to be incapable of attaining the skill levels or independence required in the community. Although the goal of extended sheltered employment is employment, actual wages paid are often very low (about $700.00 a year). Sheltered employment, like work activity and adult day training programs is segregated and is characterized by large numbers of individuals with handicaps, usually between 50 to 100, working side-by-side. Few persons who are severely handicapped ever attain sheltered workshop status; most workshops employ individuals who are mildly or moderately disabled.

Transitional employment, the process of training skills needed for competitive employment, is available only to those individuals with the highest vocational potential. Ideally, upon completion of transitional employment training, an individual leaves the sheltered environment for employment in the competitive labor market. An individual who is competitively employed performs work that is valued by an employer in an integrated setting making minimum wage or better.

Traditionally, competitive employment options exist in most local communities in Illinois. Agencies such as the Illinois Department of Rehabilitation Services offer job placement services to eligible clients. These services are usually offered to individuals who require little training to learn job-related tasks and then once placed on the job require little if any follow-up. Typically, individuals served are placed into competitive and integrated settings. Many individuals utilizing these services are not mildly handicapped, but are considered disadvantaged or displaced workers (i.e., nonhandicapped workers who have lost their jobs).

Interestingly, transition to competitive employment is atypical for persons with severe disabilities, due to several obstacles, including the subtle and cumulative result of our history of social reform which has led to the recognition of goals conflicting with contemporary ideology and methodology (Rusch, Chadsey-Rusch, White, & Gifford, 1985). For example, the "dual role" of the sheltered workshop is becoming widely recognized. As long ago as 1970, Neff distinguished between the "rehabilitation workshop" and the "sheltered workshop" with the former functioning as a transitional service for competitive employment, and the latter as providing renumerative employment to those who were considered incapable of employment apart from supervision.

Transition to competitive employment is also exacerbated by shortcomings in our view of what constitutes "best practices." For example, typical sheltered workshop staff lack knowledge of what skills should be trained, how best to train these skills, and how best to structure their programs to facilitate movement toward integrated, competitive employment (Rusch, 1983). Sheltered workshops traditionally rely

upon staff who have little knowledge about the instructional technology or industrial design necessary in developing an individual's potential for employment (Pomerantz & Marholi, 1977; Whitehead, 1979). Thus, the primary method of training, supervision with vague instructions and occasional prompts to stay on task, further encourages dependence upon sheltered employment and emphasizes working on overly simplified tasks, rather than developing marketable work skills (Martin, 1980).

Contemporary approach to rehabilitation services. Recently, the employment situation for persons with severe disabilities has improved due, primarily, to the development of competitive employment programs (CEPs). These CEPs share the following components: (1) the community is first surveyed to identify possible job placements and their associated social and vocational survival skills; (b) community-based, (nonsheltered) training sites are established within actual community work settings whereby potential employees (clients) are taught to perform the skills necessary for actual employment; (c) once the individual is trained in the community work setting (i.e., the nonsheltered training site), he/she is placed into a targeted job within a 6-month period; and (d) training and long-term followup of decreasing intensity is provided to facilitate maintenance of acquired skills, in addition to training skills unique to the new employment site. The CEPs that share these common components have been developed as part of high school and rehabilitation programs across the country and have more recently been referred to as the "supported work model of competitive employment" (Rusch, in press). The term "supported work" stresses our emerging interest in "supporting" the employment of persons who are handicapped, rather than placing these persons into employment and hoping that they make the transition. By directly

addressing the transition from the rehabilitation facility to competitive employment, the supported work model offers the advocacy and coordination necessary to provide employment training and, ultimately, community placement and adjustment. The model is relatively new, however, and the best practices facilitating handicapped individuals' participation in society are still being identified.

Table 1.

Major components of the supported work model

1. Identify available jobs in the community
2. Assess job requisites (survival) skills
3. Establish work performance objectives
4. Assess client performance and develop individualized program plans
5. Teach clients to perform entry level skills in community-based employment training programs
6. Place clients in targeted jobs
7. Teach clients to perform new skills and to maintain survival skills
8. Systematically withdraw post-placement instruction program

Why competitive employment? Compared to sheltered employment, competitive employment offers numerous advantages to persons who are handicapped. Most often competitive employment involves placement in community-integrated settings whereby the employee receives at least minimum wage, interacts with nonhandicapped coworkers, produces valued goods or services, and has opportunities for increased earnings and responsibilities. Sheltered employment, on the other hand, usually entails employment in segregated centers where the employee receives an average hourly wage of 43 cents, has little if any contact with nonhandicapped coworkers, and produces goods of questionable societal and personal value.

Summary. Competitive employment is the normal and expected career path for persons who are nonhandicapped. The opportunity to go to work

every day and to be part of a work force produces profitable personal and societal outcomes. Although competitive employment may not be a suitable option for everybody, it should be available so that all persons can, to the greatest extent possible, enjoy and engage in work that may result in individual or societal gains. The ability of rehabilitation and education personnel to change their attitudes and expectations in this respect as well as those of other educators, parents, and employers remains our major roadblock to competitive employment. The supported work approach takes advantage of new educational and rehabilitation instructional developments and emerging new idealogical developments to shaping rehabilitation services.

Characteristics of the Supported Work Approach

In the previous section, the supported work model was introduced. In this section, components of the supported work model are delineated in greater detail. First, assessment of work behavior is characterized, followed by job identification, placement, and training. Next, follow-up issues such as social validation, involvement of coworkers, and maintenance and generalization are discussed. The final subsection overviews the clients who are expected to benefit most from supported work and addresses the outcome measures that have served to evaluate program effectiveness in the Illinois model.

Assessment. In order to provide the optimal match between the individual worker and the job into which she/he is placed, assessment of work skills and identification of job requirements are necessary. Assessment of work skills should be based upon procedures that most effectively predict progress within the targeted placement setting. These procedures should ideally include collection and interpretation of data within an

ecological framework, identification of specific responses that are required in the projected placement opportunities (especially those most crucial in promoting longevity), selection and training on representative examples of these identified responses, provision of equal emphasis to baseline, formative, and summative phases of assessment, measurement of both quantitative and qualitative behavioral dimensions, and a de-emphasis upon developmentally sequenced assessments.

Placement. Within the supported-work models, Martin (1986) discussed aspects of the placement process that are keys to its success. First, community placement options must be identified and then surveyed with respect to job availability and requirements. These employment opportunities need to be evaluated, with the most favorable opportunities constituting the placement pool. To facilitate placement success, a working relationship with the employer needs to be cultivated and his/her expectations and attitudes considered. Another important contributor to job success is parental support--parents should be included within the placement process. A key step in the placement procedure is the interview process and thus clients should be prepared specifically so as to enhance the manner in which they present themselves. Finally, consistent feedback in the form of work performance can improve the likelihood of job success by ensuring that employers, workers, and trainers are in agreement with respect to evaluation of job performance.

Skill training. Stainback, Stainback, Nietupski, & Hamre-Nietupski (in press) have underscored the advantages of preparing individuals for placement through the use of "community-based training stations," as opposed to traditional simulations provided within sheltered workshops. These advantages include the following:

1. Training of vocational survival skills.
2. Opportunities to learn social interaction skills.
3. Opportunity for coworkers to serve as role models.
4. Development of understanding by coworkers of persons who are handicapped.
5. Familiarization with employment considerations by training personnel.
6. Enhancement of generalization.
7. More normalized learning experience.
8. Positive influence upon community members' attitudes towards individuals who are handicapped.
9. Enhanced likelihood of successful competitive employment placement.

Social validation. Social validation provides a measure of the acceptability of work performance as perceived by significant individuals within the workplace, e.g., employers and coworkers (White & Rusch, 1983). Two procedures, social comparison and subjective evaluation, have been used to obtain social validation. Social comparison involves comparison of the target employee's work performance with behavior of nonhandicapped coworkers within similar jobs or situations. Subjective evaluation consists of evaluating a target behavior as to its acceptability by significant others who have contact with the target employee. The two methods of social validation can be applied to: 1) work goals, 2) work procedures, and 3) work performance. Social validation provides evaluation measures most closely tied to indicators of worker success, that is, worker effectiveness as perceived by supervisors and employers.

Coworkers as change agents. In addition to the importance of measuring significant others' perceptions of worker performance, the nature of the interaction of significant others with the worker who is handicapped is often crucial. Specifically, enlisting coworkers as change agents, especially during long-term, follow-up periods, appears to be a promising approach to facilitating enduring placement success (Shafer, in press). Coworkers can be effective in the roles of advocates, observers, and trainers. The importance of coworker cooperation and involvement is especially great in situations where placement agencies provide little or no follow-up services.

Maintenance and generalization. Maintenance and generalization of work skills are seen as vocational requirements for which special training strategies must be implemented. Workers must be both autonomous in performing a skill and adaptable to environmental changes in work settings following training (Gifford, Rusch, Martin, & White, 1984). On-the-job training should incorporate strategies that promote autonomy such as self-control procedures and the systematic withdrawal of instructional procedures.

Individuals served by a model supported work program in the state of Illinois. Developmental Services Center and the University of Illinois initiated the development of a supported-work model program in 1978. The program consists of two community-based vocational training programs (food service and janitorial services), a placement program, and an employment follow-up program. To qualify for the program, potential program participants must be eligible to receive services from the Illinois Department of Rehabilitation Services and the Job Training Partnership Act, the two

primary sources of funding for the two vocational training programs. Eligibility requirements include being at least 18 years of age, severely disabled, unemployed, and in need of intensive skill training before entering the job market.

A total of 134 persons have participated n the program since 1978 (see Table 2). Forty-three percent of the persons served have been diagnosed as multiply handicapped, (i.e., having a secondary handicapped condition). Of the 134 persons who have participated in training, 108 completed training and were placed on jobs in the community. The remaining 236 individuals did not complete training for a variety of reasons including poor attendance, severe behavior problems, lack of interest in obtaining employment, and health problems.

Summary of clients placed on jobs. Of the 134 persons enrolled in training, 108 were placed on jobs in the community. Table 3 provides a summary of placement based upon length of time on the job. Individuals completing the janitorial vocational training program have been placed in a variety of settings including motels, small businesses, nursing homes, and restaurants. At these sites, the employees perform a variety of janitorial tasks dictated by the need of the individual placement. For example, some are required to use heavy industrial cleaning equipment such as buffers and carpet shampooers, whereas others perform mostly light cleaning such as cleaning restrooms, dusting, and vacuuming carpets. Graduates of the food service vocational training program have been placed primarily on jobs in the dormitory kitchens at the University of Illinois or in local restaurants. Most of these individuals have been employed as kitchen laborers or dishwashers, although some have been successfully

Table 2.

Client Characteristics[a]

Age		
18-56 years of age		
Median Age = 2		
Sex	N	%
Male	94	70
Female	40	30
Primary Diagnosis		
Mental Retardation	99	74
Mild (61)		
Moderate (35)		
Severe (3)		
Mental Illness	21	16
Learning Disabilities	9	7
Visual Impairment	2	2
Cerebral Palsy	1	1
Other	2	2

Of the 134 individuals served, 58 (43%) have a secondary handicapping condition.

Table 3

Job Placement Statistics

Janitorial/Housekeeping	Placed:	82
Length of Time on the Job	N	%
3 months	75	91
6 months	54	66
1 year or more	40	49
Still employed	36	44
Food Service Placed:	26	
Length of time on the Job	N	%
3 months	20	77
6 months	28	69
1 year or more	16	62
Still employed	12	46

placed in food preparation positions. Graduates work from 5-40 hours per week and earn anywhere from minimum wage to $7.00/hour.

Staffing and funding patterns. This supported work program is funded primarily by federal and state monies that are distributed at the local level. For example, the Department of Rehabilitation Services (DORS) and the Job Training Partnership Act (JTPA) are two agencies involved in the funding of the community-based training program, i.e., janitorial and food service (refer to Table 4).

Fee-for-service arrangements have been established with DORS whereby the program received $125 a week for each week an individual participates in one of the two training programs. These financial arrangements were

Table 4

Developmental Services Center

Community Services

STAFF:	1. Vocational Trainer	1. Employment Specialist 3.5 Follow Up Trainers	2. Vocational Trainers
STAFF TO CLIENT RATIO:	1:3	1:9	2:6
FUNDING SOURCES:	DORS ($125 wk/person) JTPA Enrollment $1,075 Completion $1,425 Placement $1,425	Title XX Local 708 Board	DORS ($125 wk/person) JTPA Enrollment $1,075 Completion $1,425 Placement $1,425 Local 708 Board
ICEP FUNDING HAS BEEN USED TO:	Co-Fund the Vocational Trainer Position	Co-Fund 2 of the Follow-Up Trainer Positions	

established with the vocational rehabilitation counselors at the local DORS office. JTPA also supports the Program. As in the case with the Department of Rehabilitation Services, individuals must be JTPA eligible. JTPA provides money through performance-based contracts that have been established between the Program and the local JTPA office. Specifically, the program received money for enrolling individuals in the training programs, having these individuals complete training, and placing these individuals into competitive employment. The follow-up component of the program is funded by the Department of Public Aid through Title XX funds, and by the local mental health board.

Summary. Competitive employment for disabled persons has moved from a philosophy to a reality, due in part, to the development and implementation of a functional technology. The "methods" described in this section are important because they focus on a socially-valued outcome: paid work and the lifestyle that paid work allows. Supported-work methods recognize the complex demands associated with training skills that need to be maintained and that will also need to be generalized across the full range of situations a person experiences in competitive employment.

The deinstitutionalization movement, including placing persons with handicaps into nonsheltered employment, has been in full swing since the introduction of the principle of normalization (Wolfensberger, 1972). Unfortunately, perspectives (such as normalization) and methodologies (such as interagency collaboration) have been misconstrued by service providers associated with adult programs. For example, normalization has been misconstrued to mean that competitive employment alone, will automatically benefit the deinstitutionalized individual. Simple exposure

to the patterns and conditions of everyday life which are as close as possible to the norms and patterns of mainstream society has not guaranteed acquisition and maintenance of community competencies associated with successful competitive employment. Competitive employment involves much more than the physical removal of an individual from one setting and his/her placement into another. "Geographical relocation" is but one of the characteristics of competitive employment. Indeed, relocation and forming a cohesive social network of people and resources is complex and personnel who are trained to appreciate these complexities are needed. However, few university programs exist that certify special education or rehabilitation personnel specifically to work with adults with severe disabilities.

Many service providers in the field now will require inservice training to update their skills to successfully integrate adults into competitive employment. Those professionals working with severely disabled adults in institutions, large intermediate care facilities, and sheltered workshops have generally not been as successful in implementing integration efforts as their colleagues who work with handicapped children in public school settings. This may in part be explained by the lack of university programs certifying special education personnel to work with adults who are disabled. The final section of this paper focuses upon our need to promote meaningful employment and to enhance quality of life for individuals with handicaps by establishing new rehabilitation training programs in the State of Illinois.

Recommendations for Personnel Preparation

Many adult service providers in the State of Illinois are involved in emerging trends that embrace contemporary ideology, suggesting that

integrated outcomes are the goals we should be working toward. In addition, current program initiatives and funding are available for service providers to develop supported work programs. However, adult service providers currently serving persons with handicaps continue to have low expectations for them and fail to provide opportunities for meaningful employment. These same professionals do not possess the knowledge or skill necessary to develop vocational training, placement, and follow-up services that are critically important to the development of a supported-work program. At this time it seems that there is an overwhelming need for the establishment of personnel preparation programs at the preservice and inservice levels.

Preservice training. There is a growing need for newly trained professionals in the area of competitive employment for persons with handicaps. Special educators as well as rehabilitation personnel must acquire the skills needed to orchestrate complex service plans for individuals with handicaps. These services must involve input from a variety of disciplines including educators, language clinicians, occupational and physical therapists, psychologists, and adult service providers, funding agencies, and parents. Consequently, special educators and rehabilitation personnel must become educational team managers and coordinate all necessary services to ensure the client's needs are met.

The objective of preservice training programs should be to provide a theoretical base and the practical skills necessary to establish CEP's. The greater the degree of handicap of the persons being served, the more precise and specific the competencies must be of a professional attempting to provide effective educational programming. Preservice training programs have traditionally emphasized elementary-aged students with mild

to moderate handicaps. A new emphasis must be placed on serving adolescents and adults and, specifically, those with severe disabilities. The needs of adolescents/adults with severe disabilities in the areas of curriculum, instruction, and follow-up services are significantly different from the needs of youth with severe disabilities. Direct service personnel specifically trained to develop and implement educational/rehabilitation programs for persons with severe disabilities are necessary.

Inservice training. There are always going to be teachers and adult service providers who will have never been trained specifically to develop CEP's. However, they are now charged with providing training programs for these individuals. Therefore, inservice training programs designed to provide the conceptual base and practical skills as provided in preservice training programs must be developed. In addition, it may be necessary to change the attitudes of personnel currently providing day programming for persons with handicaps.

Unlike preservice training, inservice training is constrained by time, which would necessitate an instructional format that differs from most preservice training programs. Personnel trainers must work very closely with the school or service agency administrators and staff to establish a format compatible with the persons being served. In addition, in many instances personnel development activities may require that the instructors (e.g., university professors) travel to the inservice participants rather than requiring the participants to convene on the instructor's territory.

Summary. Due to the complexity of the task facing special education and rehabilitation personnel serving persons with disabilities, personnel preparation programs will have to provide a more comprehensive

and systematic curriculum. There is a critical need for the practices developed in model demonstration programs to be incorporated into preservice and inservice preparation programs. Because of the variety of specialists serving individuals with disabilities, educators and rehabilitation personnel must become educational team managers (Mori, Rusch, & Fair, 1982). In addition, a model personnel preparation curriculum should be competency-based, field-based, behaviorally grounded, include community-referenced curriculum development, and provide a focus on transition issues. Further, there should be a broadened awareness of medical, legal, and advocacy issues, as well as an understanding of service delivery systems that promote interagency cooperation. Due to the varying degrees of handicaps experienced by consumers, education and rehabilitation personnel must possess a wide and sophisticated range of skills.

General Summary

Wehman and Kregel (1983) describe a "dramatic baseline" in employment of persons with handicaps, citing unemployment rates of 50 to 75 percent for this population. Unemployment, in part, relates to traditional rehabilitation practices that do no significantly influence the lives of persons with disabilities. Persons entering the world of employment have been "plugged" into a placement continuum and expected to move from work activity to sheltered employment to competitive employment. Bellamy and his colleagues (in press) have documented that in reality, the majority do not move through this system. They estimated that based upon current averages of time spent in each component of the rehabilitation continuum, it would take approximately 50 years for a person to qualify for competitive employment (assuming entrance at the work activity level after high

school). There should be little doubt that the system as it stands needs challenging.

The basic change necessary is a philosophical one. Traditionally, the rehabilitation system has been exclusionary in its practices with persons with handicaps, accepting only those whose potential for employment is highest. Recently, this exclusionary approach has been challenged; in fact, it has been totally ignored. Many model programs are successfully in operation across this country. In each of these programs there are common components that collectively define the "supported work model."

In summary, on the positive side, research in the area of vocational training for persons with handicaps has demonstrated that these individuals are capable of being productive members of integrated work settings. Consequently, a recent emphasis has been placed on improving the quality of vocational training programs throughout his country. On the negative side, there exists a critical shortage of professionals who have the knowledge base and practical skills necessary for developing and delivering "supported work" options. Although little research has been conducted to evaluate the necessary components of effective personnel preparation, a number of educators have suggested that training programs should be competency-based as well as field-based. Theoretical foundations should be rooted in a behavioral technology, and curriculum development strategies should be community referenced.

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The Ecology of the Workplace

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The Ecology of the Workplace

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Most people will hold more than one job during their lifetime. In a follow-up study conducted in the State of Vermont, 23% of the youth with handicaps were shown to change their employment status over a two-year period of time and 63% changed their status over a four-year period of time (Hasazi, Gordon, & Roe, 1985). The reasons why people change their jobs vary. For example, some people change jobs because they are not paid enough, they do not like their working hours, they do not like their boss, they find their work to boring, or they find that their job interferes with other aspects of their life. Similarly, people may get fired because they do not perform their job at an acceptable rate, they do not follow directions, they show up late for work too often, or they do not get along with their coworkers. In other words, employment status changes because the match between the individual and the job is not ideal.

It is the premise of this chapter that there will be less employment turnover if there is a good "match" between employees and their jobs. A central question that must be addressed with regard to this premise, however, is whether high employment turnover is desirable or undesirable. Or, another way to pose this question is whether long-term job maintenance is desirable or undesirable. The answer to the question varies depending upon your perspective. From the perspective of the employee, job turnover may be desirable in some instances and not desirable in other instances. If the worker is not making enough money to pay for essentials such as food, clothing, and shelter then securing a new and higher paying job

would seem to be very desirable. On the other hand, being fired from a job or electing to quit a job without having another job prospect could be very undesirable.

From the perspective of employers, job turnover may be desirable to some because they can continue to pay the same salary over time without having to offer pay raises. However, job turnover would be undesirable for positions that were difficult to fill and/or were crucial to production.

With regard to persons with special needs, job maintenance is seen as desirable. Part of this is based on the fact that the unemployment rate of individuals with handicaps is quite high. The U.S. Commission for Civil Rights (1983) reported that unemployment for persons with handicaps was between 50 and 80 percent. One possible way to decrease unemployment is to assure a better match or fit between the worker and the job. From the perspective of service providers who assist individuals with handicaps in job placement, training, and follow-up, job fit also decreases the likelihood of job separation.

The purpose of this chapter is to discuss several ecological dimensions that should be considered to achieve a good match between a job and a person with special needs. These dimensions are discussed in relation to two basic skill groups crucial to job acquisition and maintenance: work performance skills and social-interpersonal skills (Rusch, 1979). First, a rationale is given as to why the workplace should be viewed from an ecological perspective and how this can enhance the match between the worker and the job. The ecological perspective is defined and three dimensions of ecology are described. Second, each ecological dimension is discussed with respect to potential assessment factors and intervention strategies.

Ecological Perspective - A Case Study

Sharon is a 22 year old female with mild mental retardation. She is employed at a pizzeria where she is responsible for prepping the salad bar, washing dishes, and bussing tables. Sharon has held this job for the past nine months. During this time, she has not missed one day of work and has never been late. If you ask her how she likes her job, Sharon will tell you that she likes it very much.

Prior to her present job, Sharon had worked at another pizzeria in the same town. Her duties were the same. But, she was fired because she always came in late. Also, if you asked her, Sharon would tell you that she did not particularly like her first job.

What are the differences between these two jobs? The job tasks were the same, the product that was sold was the same, the pay was similar, and so was the working schedule. In addition, Sharon was equally competent in both settings in performing her job duties. What was going on in these jobs that made Sharon get fired from one and not from the other, and like one and not like the other? Viewing Sharon's two jobs from an ecological perspective will help provide the answers.

Ecology Defined

The ecological perspective has its roots in ecological psychology. Ecological psychology studies the interrelationships and the interdependencies between individuals, their behavior, and their physical and social environments (Barker, 1968; Schoggen, 1978). Behavior is viewed as a dynamic part of the interaction between the person and the environment--that is, people influence environments and environments influence people. For example, when we attend a football game we know that in this context it is appropriate to yell and clap our hands. But when we go into a

library, we know by observing the people around us that we would be reprimanded (or possibly asked to leave) if we displayed the same rowdy and noisy behavior.

If ecologists were to study a restaurant setting as a potential job site for a student with special needs, they would go into that setting and directly observe ongoing streams of events. They might describe the physical layout of the restaurant, the specific job tasks, the types of customers, the pace of the work, the managerial style used by the supervisor, and interactions between coworkers. If special educators were to study the same restaurant setting as a potential job site, they might only study the specific job tasks that would need to be accomplished in order to get the job done. But there is more to finding and keeping a job than just being able to perform specific job duties. For example, research has suggested that many individuals with special needs lose their jobs because of inappropriate social behaviors (Brickey, Browning, & Campbell, 1985; Greenspan & Shoultz, 1981; Hanley-Maxwell, Rusch, Chadsey-Rusch, & Renzaglia, 1986). Thus, potential job sites need to be assessed from more than just a job-task perspective.

Studying employment contexts via an ecological perspective implies that successful adjustment to employment may depend more on the match between people and their environments than on the personal characteristics of individuals (Berkson & Romer, 1980; Schalock & Jensen, in press). The goal of job placement and maintenance is to maximize the fit or the congruence (Thurman, 1977) between the worker and his/her environment. According to Thurman (1977), congruence or fit occurs when an individual's behavior is in harmony with the expectations of the environment. Workers with special needs may display behaviors that vary considerably from

established expectations in employment settings or they may lack the particular skills necessary to function adequately. If incongruencies occur, then the behavior of the individual will have to be changed, or the context (i.e., employment setting) in which the deviant or incompetent behavior occurs will need to be altered, or both the person and the environment will need to be transformed. Generally, in special education, we have tended to focus our efforts on changing the behavior of target students and have not given very much thought to environmental variables that might need changing.

Ecological Dimensions

In order to make a match between the student with special needs and a job, several ecological dimensions of the employment context need to be considered. Although there are numerous ecological dimensions that are probably relevant (e.g., Moos & Lemke, 1983), three are defined and discussed in this chapter: (a) physical ecology, (b) social ecology, and (c) organizational ecology. It must be stated at the outset that few of these dimensions have been defined and described in relationship to employees with handicaps in the context of employment settings. Thus, the examples described must not be thought of as definitive, but should serve to illustrate the broad range of dimensions relevant to this area. In addition, these three dimensions are not mutually exclusive; they overlap and are interrelated.

Physical Ecology

Physical ecology primarily refers to the architectural and physical designs of environments that may affect behavior. For example, we have all probably had trouble working on hot summer days when there has been no air conditioning. Similarly, we may have had difficulty concentrating on

our assigned work when our coworkers were making a great deal of noise. Other variables such as ventilation and design and comfort of machines, tables, and chairs can potentially influence work efficiency.

Physical arrangements can also influence interaction patterns in work settings. For example, if employees are placed in areas that are far apart from one another there is probably less interaction occurring between these employees than if the same employees are working side-by-side. Similarly, comfortable chairs arranged in a circle may be more likely to encourage conversation during a break than chairs that are arranged in rows.

Physical ecology variables deserve careful consideration when trying to make a match between a person and a job. This is particularly true for individuals with physical handicaps. Fortunately, there is a growing body of literature that has addressed many of the physical ecological variables that need to be assessed in job settings, especially with regard to production skills. Additionally, there is also a body of literature that has begun to specify ways to adapt and redesign jobs to enhance the match between a worker and the job if a discrepancy occurs. Unfortunately, there has been little work done with regard to physical ecological factors and social behaviors.

Production Skills

The architectural and physical designs of work environments have been the focus of study by industrial engineers, efficiency experts, and industrial managers since Frederick Taylor's work in the 1800s, which focused upon production requirements irrespective of psychological and social influences. Taylor's work preceeded modern-day time-in-motion studies. Frank and Lillian Gilbreth can be credited with extending

Taylor's work to include social factors associated with employment. In fact, the "therblig" (Gilbreth spelled backwards), which refers to the units of motion needed to accomplish tasks, heavily influenced early efforts in special education to develop task analyses associated with job analysis (cf. Mithaug, 1981).

Today, job analysis is the method most often used to obtain information related to physical ecology variables. Job analysis is the process through which accurate and complete information about the requirements of a job can be identified so that the functional abilities and limitations of the individual with handicaps can be matched to these requirements. An emerging trend in rehabilitation engineering is to identify potential problems through job analysis and to make appropriate accommodations. Job analysis is straightforward and has been dealt with extensively in the literature (e.g., Engelkes, 1978; U.S. Department of Labor, 1979).

Assessment variables. A job can be described as a composite of tasks requiring various skills sequenced to produce a specific result. The results of employee efforts are referred to as production. Consequently, production skills have been a primary focus of job analysis. Conducting a job analysis through direct observation and interview techniques are basic methods of gathering information widely accepted throughout industry. Occasionally, a job coach who is conducting a job analysis will actually perform the tasks associated with the target job to better understand the demands of the job.

When assessing job requirements, there are a number of factors that should be considered. These factors include: (a) how the tasks are accomplished, (b) the physical movements and/or mental processes involved in the work activity, (c) the degree of physical effort and/or the com-

plexity of mental processes involved in the job, (d) the time involved in performing each task, and (e) the frequency with which each activity is performed (U.S. Office of Personnel Management, 1984). Comparing these job requirements with individual abilities allows potential functional incompatibilities to surface so that appropriate intervention strategies may be applied to reduce or eliminate the incompatibilities.

All jobs require the completion of a series of tasks (i.e., the methods, techniques, tools or equipment employed by a worker to complete work tasks). One focus of job analysis has always been to identify precisely what an employee will be required to do when placed in a particular job. Typically, job tasks are identified according to the time and sequence in which they are to be completed throughout a work shift. For example, a janitor may be required to complete pre-assigned tasks within a specific time frame. Failure to do so may result in job termination.

Identification of the tasks associated with a job is made through direct interview and observation of employees performing the target tasks. Identification of job tasks is important to defining the target employee's role. Sowers, Thompson, and Connis (1979) indicated that the absence of a clearly defined job sequence related to how long an employee remained on the job. Absence of job sequence descriptions appeared to correlate highly with shorter employment periods.

The physical movements and/or mental processes involved in the work activity usually include descriptions of physical motions such as pulling, lifting, sorting, sitting, walking, and matching; the mental processes can include reading, interpreting, answering questions, and problem solving. The degrees of physical effort and/or the complexity of mental processes

can be extended to include such factors as weight or type of problems to be solved. For example, an employee might be required to lift tools or equipment that weighs 40 lbs or to reach and strike a keyboard. Mental involvement might include reading complex instructions associated with software programs or discarding templates with soldering imperfections at any one of several points.

The total time involved with a task and the frequency the task is performed can vary immensely across jobs. For example, a task may require ongoing involvement throughout the day or various tasks may be required to be performed frequently according to customer demands. In the former example, a worker may survey respondents through a telephone interview format. In the latter example, the employee may wipe tables as a function of the number of customers who eat in a restaurant.

The work environment alone poses demands on an employee. In fact, work activities may present fewer functional problems for an employee with handicaps than the environment. For example, an employee who is capable of following simple instructions provided by a supervisor may be distracted by excessive noise at the worksite, an employee in a wheelchair who is capable of cataloging and shelving reference material in one library may not be able to do so in a second library where isles are too narrow or shelves are too high. When considering the work environment, attention must be paid to the location of work stations (e.g., on the third floor versus on the first floor), mobility barriers (e.g., steps, narrow passageways, steep grades), physical design of the work station (e.g., furniture dimensions, floor coverings, proximity to coworkers), climatic conditions (e.g., temperature ranges, humidity, drafts), atmospheric conditions (e.g., odors, dust, ventilation), presence and level of noise

(e.g., how many coworkers work within an area and the number of potential disruptions in the work environment), and potential hazards (e.g., wiring, heaters, explosives, machinery) (U.S. Office of Personnel Management, 1984).

Intervention strategies. The purpose of intervention strategies is to redesign jobs in situations where the match between job requirements and potential employees' abilities is disparate. The intervention should be job oriented and not focused solely upon the characteristics of the employee. Focusing upon employee characteristics has usually led job placement personnel to develop employee solution criteria that are used more often to discourage employment than encourage employment. The job-oriented analysis is more appropriate for designing intervention strategies. As discussed above, job analysis is suited to identifying tasks associated with a position and the functional demands placed upon employees by the tasks and the environment. Job requirements are derived through careful observation of employees performing job tasks at the actual worksite. These observations will provide the service provider with first-hand information needed to plan interventions.

Careful job analysis and job modification are often critical to the employment success of the individual with handicaps. Wershing (1984) cited the need to critically analyze requirements for job performance and compare these with the capabilities of the individual with handicaps. She suggested the use of Available Motions Inventory (Malzahn, 1984) as a method of analysis. Additionally, she cited a variety of studies that investigated the effects that particular job modifications have on the ability of target workers to perform job tasks.

A careful comparison of job analysis data and the characteristics of

a potential employee help us to understand incompatibilities that exist between the known physical and/or mental demands as well as capabilities. Typically, a list of potential remedies or accommodations are listed as potential interventions that could resolve identified problems. There are a number of possible solutions to problems and the best choice must be made based upon the individual being considered for placement. When deciding among potential interventions the employer and potential employee should be included in the final determination.

There are numerous job accommodations that can be made to enhance matches between employees and their jobs. For example, if an employee is totally deaf and is being considered for a job that requires some telephone use, the phone could be adapted to include a light that flashes when the phone is ringing or a secretary could be assigned to take incoming calls. If an employee cannot grasp a pen sufficiently hard enough to hold onto a pen, a hand orthosis may be designed to allow writing with a pen. If an employee cannot reach shelves that are too high, the employee could be reassigned to shelving reference materials at a lower level or additional bookcases with shelves at an appropriate height could be obtained. Thus, jobs can be redesigned in situations where the match between the job requirements and the employees' abilities is not ideal.

Social Skills

As indicated above, little information is available regarding the influence that physical ecology variables have on social behaviors and social interaction patterns in employment settings. Thus, what is presented below are some possible considerations with respect to assessment variables and intervention strategies.

Assessment variables. Research in other areas (e.g., Ittelson, Proshansky, & Rivlin, 1970) has reported the effects of physical ecology

variables on social behavior. Ittelson et al. (1970) studied psychiatric wards in New York by categorizing the nature and location of social behavior in relation to different physical arrangements. For example, after recording how bedroom space was used depending on the number of people assigned to a room, they found that activities were more varied when one to three people were assigned to a room than when more than three people were assigned to a room. Thus, contrary to what most people might believe, more social interactions took place when fewer people were assigned to rooms.

Few investigations have specifically assessed the effects of physical ecology variables on the social behaviors of special needs workers in employment settings. However, Salzberg, Agran, and Linugaris/Krafter (1985) surveyed employers from five different jobs to obtain their opinions regarding social behaviors that may differ across jobs. They confirmed that social factors were critical for success in all jobs studied, there were differences between jobs. For example, social behaviors were more important for kitchen helpers and food service workers than for janitors, dishwashers, and maids. These differences were attributed to the fact that some jobs (i.e., kitchen helpers and food service workers) occurred in more of a physical-social context, where workers frequently interacted with coworkers and customers.

In a preliminary analysis regarding the effects of physical ecology variables on the social behaviors of employees with mental retardation and their coworkers, Chadsey-Rusch (1986) observed more frequent social interactions occurring in smaller employment settings (i.e., fast food pizza restaurant) than larger employment settings (i.e., university food service settings). In addition, most of these interactions took place

when workers were involved in production tasks. That is, conversations appeared to revolve around work-related matters rather than social-related matters (e.g., how something looked when it was put together versus what somebody watched on television the night before). Thus, it may be that when employees work in physically smaller environments, they interact more due to the very fact that they are in closer proximity to one another when they are working.

Intervention strategies. Assessing the effects of physical ecology variables on social behaviors has several implications for intervention strategies that may enhance the match between employees with handicaps and their jobs. For example, if a service provider is looking for a job placement for a student who has good social skills and likes to interact with others, a physically small working environment with high interaction rates between coworkers may be an important factor to consider. On the other hand, placing the same individual into a setting that is physically arranged so it discourages interactions (e.g., large space or very noisy due to heavy machinery) may not be desirable.

In terms of changing the physical ecology of an employment setting, not much can be done by the service provider. That is, there is probably little that can be done to rearrange space unless the service provider happens to work initially with an architect and contractor when they are designing and building a worksite. However, there may be times when the service provider can rearrange workers' positions in relation to one another by moving a table or equipment or changing a job task. Thus, the best intervention strategy may be to assess physical ecological variables prior to making a job placement so that these variables "match" the desires and characteristics of the special needs worker.

Summary

Job analysis is an important procedure for identifying variables associated with physical ecology and identifying intervention strategies that result in an improved match between employee's performance of production skills and social-interpersonal skills. Regarding production skills, several dimensions of a job analysis were presented. These included job tasks and the work environment. The intervention strategies presented were designed to identify potential remedial approaches to functional problems.

Physical ecology variables may also have an effect on social interaction patterns in employment settings, but little research has been done in this area. It does appear that the arrangement and size of physical space may increase or decrease the frequency of interactions displayed. Many things, however, are unknown. For example, little is known about the effects of heating, lighting, noise level, number of people, and staffing patterns on social interaction behaviors. Clearly identification of the important physical ecological variables is needed before effective intervention strategies can be designed for special needs workers.

Social Ecology

For the purposes of this chapter, social ecology refers to the interactions and interrelationships that exist between individuals and/or groups within the employment context. As stated previously, social ecology variables are important for enhancing matches between workers and their jobs because many handicapped workers have lost their jobs because of inappropriate social behaviors (e.g., Brickey, Browning, & Campbell, 1985; Greenspan & Shoultz, 1981; Hanley-Maxwell, et al. 1986). In addi-

tion, social interactions occur with great frequency in some job sites (Chadsey-Rusch, 1986).

Production Skills

Little information is available regarding how social ecology variables might affect production skills. In terms of assessment, only a few variables are discussed. Intervention strategies are discussed more completely within the social skills section.

Assessment variables. The relationship between social ecology variables and production skills has not been well studied. For example, even though some workers have been fired from their jobs for inappropriate social behaviors, little is known about whether or not these individuals also had poor production skills. Hanley-Maxwell, et al. (1986) found 19 of 51 job terminations were due to both social and nonsocial reasons suggesting that poor production and social skills may be interrelated. What we do not know is whether poor production skills leads to poor social skills or whether poor social skills leads to poor production skills. Similarly, if an individual is judged to have good social skills, we do not know if that necessarily makes someone a more competent employee. Perhaps, a worker will be happier and more productive if a positive relationship exists with his or her coworkers and supervisor (House, 1981).

Intervention strategies. To date, few research studies have examined the effects of manipulations of social ecology variables on production skills. For example, if handicapped workers are taught to carry on conversations with their coworkers at break time, the effect this intervention strategy might have on production speed is unknown. Generally, when social ecology variables are manipulated in employment settings, data is collected on social skill measures and not on production measures.

It is unlikely that different social skill intervention strategies would be used to change social or production skills; the primary problem is that the effects of these strategies are not usually assessed on work performance. Thus, potential social ecology intervention strategies that might have an effect on production behaviors are discussed more fully below in the social skills section.

Social Skills

When making a match between a worker with special needs and a job, it is important to consider the effect that social ecology variables can have on social skills. This is important not only because of the relationship between these skills and job tenure, but also because of the increasing attention being placed on social-support networks and their relationship to quality of life issues. Social-support networks are defined by the interaction between individuals and groups that improve adaptive competence in dealing with short-term crises, long-term stresses, and life transitions. These networks include "emotional, informational, and material support that is provided by friends, relatives, neighbors, service providers, and others with whom (the target employee) has an ongoing relationship, and to whom one can turn in times of need or crisis (O'Connor, 1983, p. 187).

Recently, Karan and Berger (in press) cited several studies that highlight the importance of developing social support networks in everyday situations, such as in the employment setting. In fact, studies conducted with nonhandicapped persons have shown that certain types of social support can reduce various types of occupational stress and improve certain health indicators (House, 1981). Similarly, O'Connor (1983) concluded that social support can lead to reduced stress, enhanced well

being, and better outcomes for physical health problems. Finally, Romer and Heller (1983) in a review of studies examining the role that peers play in the successful adjustment of adults with mental retardation in community settings concluded that individuals with more peer contact were more likely to remain in the community, transfer to less restrictive settings, demonstrate independence in self-care skills, earn more money, and transfer out of sheltered workshops into less restrictive employment settings.

If mismatches occur between employees with handicaps and their jobs, and the mismatches are due primarily to social ecological variables, it should be clear from the literature cited above that there will be different ways of viewing assessment and intervention strategies. That is, one might assess and design intervention strategies for the individual with handicaps or one might assess and design intervention strategies that affect social support networks, or the employment context. As discussed previously, when ecological incongruencies occur matches can be enhanced by changing the individual, by changing the context, or by changing both the individual and the context. Special education has not always assumed an ecological perspective, and thus, when mismatches occur, assessment and intervention strategies have primarily focused upon changing the individual with the handicap (cf. Hanley-Maxwell, Rusch, & Rappaport, 1986). This has also been the trend in the area of social skills assessment and training in employment settings.

Assessment variables. Only a few studies have identified the types of social behaviors that enhance matches between employees and their jobs in competitive employment settings. Again, the premise of these studies purport that the social skills of the worker with special needs require

assessment rather than the social interaction patterns of others within the employment context.

In an investigation done by Rusch, Schutz, and Agran (1982), questionnaires were sent to 120 potential employers in Illinois (food service, janitorial/maid service, and light industrial occupations) to find out their expectations for entry into employment. The results from the survey indicated that 90% of the employers judged 16 social behaviors to be important. Two social behaviors in particular (reciting full name on request by verbal means and following one instruction provided at a time) were mentioned by every employer as being critical in competitive employment settings.

In another study, Salzberg et al. (1985) surveyed employers from five different jobs to obtain their opinions regarding social behaviors important for entry-level work. The results indicated that social behaviors related to worker productivity (e.g., asking supervisors for assistance, following directions, responding to criticism, getting information before a job, offering to help coworkers) were rated higher in importance than general personal social behaviors (e.g., listening without interrupting, acknowledging, and expressing appreciation to coworkers). Interestingly, there was little relationship between the frequency of occurrence of a behavior and its rated importance.

In addition to looking at the social behaviors employers identify as being important in various jobs, we can also look at the reasons employers have fired handicapped workers when obvious mismatches have occurred. For example, Greenspan and Shoultz (1981) conducted a study to determine the primary reason for job termination from competitive employment of 30 individuals in Nebraska with mild/moderate mental retardation. They found

that 17 of the 30 subjects lost their jobs for social reasons. In a more fine-grained analysis, Greenspan and Shoultz further sorted the social reasons for job loss into three categories: (a) character or moral reasons (e.g., stealing, assaulting others, sporadic work attendance), (b) temperament or affective reasons (e.g., yelling, banging head, hallucinations), and (c) social awareness reasons, or not understanding people and work settings (e.g., walking into a meeting and talking about a television program, being very inquisitive about other people's business). The results from this study revealed that three persons lost their jobs for reasons of character, five lost their jobs for reasons of temperament, and nine individuals lost their jobs for social awareness reasons.

Brickey et al. (1985) also looked at the social reasons that accounted for job loss for 53 adults with varying levels of mental retardation who had been placed in Projects With Industry or competitive employment. Social behaviors that contributed to job terminations were: relations with peers and supervisors, inappropriate behaviors, absenteeism and tardiness, poor motivation and attitude, hypochondria, gross insubordination and abusive behavior, and refusal to accept instructions. (For a more detailed review of studies that have investigated the social reasons for job loss, see Chadsey-Rusch, in press).

Clearly, these studies suggest that a number of important social skills have been identified as being important for successful matches to occur between workers with special needs and their jobs. In addition, several studies have also pinpointed the types of social behaviors that, if displayed, are likely to cause job terminations. It would seem logical that if a target employee was assessed and found to be lacking in a

particular social skill that was required for a job, this required skill would be taught to the individual. But, suppose an employee was found to have all the necessary social skills needed for the job and still was terminated for social reasons? A possible answer to this question necessitates the assessment of other social ecological variables, such as the social context in the employment setting.

For the purposes of this chapter, social context variables in employment settings refers to the personal characteristics of the members (i.e., the employer and coworkers) that may influence the "climate" of the setting, which in turn may influence the level and type of social support that a worker with special needs is likely to encounter on the job. Personal characteristics were described by Moos and Lemke (1983) as suprapersonal factors. They include such things as educational history, functional abilities, activity level, friendship patterns, physical appearance, and interests (e.g., job and leisure) and attitudes of the employer and coworkers. Few personal characteristic variables have been assessed with respect to matching workers with jobs. The area that has received the most attention is employer attitudes. For example, in a recent survey Shafer and Banks (1986) reported that 71 percent of the employers they surveyed had favorable or noncommittal attitudes toward hiring employees with handicaps. This figure represents responses from employers who had prior experience working with employees with handicaps and for employers with no prior experience. It is entirely possible that the employers with more favorable attitudes toward working with employees with handicaps are more likely to provide social support on the job, which may in turn influence the "goodness" of the job match.

Remember the anecdote about Sharon. As you recall, she was fired from one job (Job A) for always coming in late, but had never been late for her new job (Job B). Both of her jobs were similar with respect to hours, pay, and task responsibilities. But obviously, there were differences occurring in the settings that caused Sharon to like Job B and dislike Job A. One big difference between the jobs was the attitude and interactional style of the employers. In Job A, the employer did not have a very favorable attitude about hiring Sharon, but in Job B, the employer was more than willing to work with handicapped workers, had worked with them in the past, and had liked the advantage of being able to use the targeted-job-tax credit. In addition, the employer in Job B often worked side-by-side with her employees and frequently told stories and jokes. It was also evident that this employer provided social support for Sharon on the job because she had been observed defending Sharon after a coworker had yelled at her.

One more interesting note about Sharon. At the same time that Sharon was working at Job B, she was kicked out of her group home for breaking curfew. Some nights, Sharon stayed out all night. But even though Sharon stayed out all night, she was never late for Job B. It may be that Sharon uses the same tactic (i.e., violating time) to get out of situations that she does not like. That is, she did not like Job A so she frequently came to work late, and she did not like her group home, so she never came home on time.

Although we know that employer attitudes may affect the job match, we don't know very much about coworker attitudes. In the only study to date, Hill and Wehman (1980) reported that coworkers have a predominantly positive perception of the handicapped worker. Coworkers seemed to value the

work attitudes and positive personality characteristics of the handicapped worker more than how well they did their job. Like employer attitudes, coworker attitudes may affect the match between workers and their jobs.

Intervention strategies. Numerous studies have investigated various methods of changing social behaviors of workers with special needs (cf. Chadsey-Rusch, in press). The majority of studies that have investigated strategies to increase social competence have used social skills training packages. These packages have typically consisted of some combination of the following components: (a) a rationale as to why the social behavior is desirable, (b) an opportunity to observe examples of the behavior (i.e., modeling), (c) an opportunity to practice the behavior, usually in role-play situations, and (d) feedback regarding performance. By and large, most studies have employed these packages in analogue settings (e.g., laboratory room), but several studies have also trained and taken measures of the behavior in the natural environment (i.e., on the job). While these packages have proven useful for increasing the acquisition of social skills, few generalization effects have been noted.

Few studies have investigated strategies for changing the social context (i.e., employers and coworkers) in employment settings. In a general review on changing attitudes toward handicapped persons, Donaldson (1980) reported several intervention strategies that could be considered. One factor that emerged in successful interventions was assuring that the person had at least equal status in relation to nondisabled persons. By equal status, Donaldson meant that individuals with handicaps and non-handicapped individuals should be approximately the same age and should have comparable social, educational, or vocational status. An example of

nonequal status would be when a target employee always needed help or assistance from coworkers or employers.

Another intervention strategy that was found effective in the Donaldson (1980) review was exposure to presentations of, or experiences with, persons who represented nonstereotypic images of disabilities. For example, media presentations might be used to convey information about what it is like to be handicapped, who they are as individuals, and how they expect nonhandicapped persons to relate to them. This strategy helps to reduce the discomfort, uneasiness, or uncertainty that nonhandicapped individuals may have in their interactions with persons with handicaps.

Shafer (in press) has suggested a different type of intervention tactic. He has proposed that coworkers should be taught to assume three new roles in employment settings: an advocate role, an observer role, and an intervention-agent role. By being an advocate, coworkers can help to protect the rights of target employees, can help employees from getting "stuck" with the least prestigious tasks, and can minimize practical jokes. By being an observer, coworkers can assist service providers in providing information on how the target employee is doing on the job. If coworkers assume the role of a trainer, they may be asked to assist the service provider or employer in teaching specific skills.

Summary

From the information presented above, it is clear that social ecology variables can have an effect on matches between workers and their jobs. If workers display inappropriate social skills, there is a strong likelihood that they will be fired from their jobs. Employers have been surveyed and several crucial social skills have been identified with employment success, such as following directions and being able to accept

criticism. Thus, if certain social variables are found to be important for a job, and a worker is found to be lacking in these skills (or displays behavioral excesses), then intervention strategies will have to be designed to enhance the likelihood of a successful match. (Or, another strategy would be to find a job that did not require the social skills that the worker was lacking.)

Other important social ecology variables are those associated with the social context of the employment setting. That is, personal characteristics of the employers and coworkers can have an effect on job matches, particularly with regard to the issue of providing social support to handicapped workers. If a mismatch is due to social context variables, then intervention strategies will have to be designed to change the employer and/or coworker in the employment setting--or at least these variables will need to be considered when placing handicapped workers on jobs.

Although we are somewhat knowledgeable about the effects of social ecology variables on social skills, we do not know very much about how these variables might effect production skills. Even within the social skills framework, little information is available regarding the personal characteristics of most employers and coworkers in job settings and how they might affect the social support received by handicapped workers on the job. It is clear that social ecology variables warrant further research.

Organizational Ecology

In this chapter, organizational ecology refers to those policy and program factors in an employment setting which may influence individual and group behavior. For example, the type of management or supervisory

style that is used by the employer can potentially influence production skills and the social interaction patterns present in the workplace. If an employer's style is to provide constant supervision through coercion, workers may be less satisfied with their jobs which may in turn cause production rates to fall. On the other hand, if employers are supportive and allow a certain degree of employee autonomy, it is likely that production rates and job satisfaction will be high.

Production and Social Skills. Little work has been done in regard to the influence of organizational ecology variables on job acquisition and maintenance of workers with special needs. Since there is so little work in this area, assessment variables and intervention strategies are discussed with respect to both production and social skills together.

Assessment variables. Moos (1973) has discussed a number of variables which relate to the organizational ecology dimension. For example, the size of the organization and the number of organizational levels of departments within a specific business or industry could enhance or impede a match between workers and their jobs. Some workers may feel more comfortable working in organizations that are smaller in size and have fewer departments or bureaucratic levels.

Another variable that deserves consideration is the type of management structure that is present within an organization. For example, one might want to note whether management was centralized or more decentralized. Similarly, it might also be important to determine the span of control that exists with the organization--that is, the number of workers that each manager is responsible for supervising.

As discussed previously, management style would be an important feature to assess. Some supervisors prefer to interact with their employees

on a frequent basis by giving many directions and continual feedback. While this may be a desirable management style for some workers, other workers may prefer a less intrusive supervisor.

Another variable that is somewhat related to management style is the degree with which a job allows employee autonomy. That is, it would be important to assess the extent to which workers are encouraged to be self-sufficient and independent. Similarly, the freedom that workers have with regards to making decisions and problem-solving are all important features of autonomy.

Two other dimensions of organizational ecology which may influence work performance and/or social behaviors are the (a) staffing ratios and work patterns in a job and (b) the salary levels, benefits, and opportunities that exist for advancement. While the importance of salary levels, benefits, and opportunities for advancement are self-explanatory, staffing ratios and work patterns may need to be more succintly defined. Staffing ratios refer to the number of workers assigned to complete tasks within an organization which would influence the type of pressure that is put upon workers. And work patterns, in this case, refers to the flexibility of a setting in allowing employees to work different time schedules, e.g., flex-time and job sharing.

Probably the key word in regard to organizational ecology variables is flexibility. That is, the degree to which the employment setting has clearly articulated policy and program goals that match the goals of the employees, and the degree to which the policy is flexible enough to allow input from the employees to modify goals and the working environment.

Intervention strategies. Alternative work patterns has probably received the most attention with respect to organization ecology vari-

ables. McMahon and Bartley (1981) suggested that for several reasons (e.g., transportation difficulties, health and stamina, skill demands) many individuals with handicaps may be unable to work traditional work hours. To accommodate this problem, two alternative work patterns have emerged: flextime and permanent part-time employment. Flextime allows employees more control over the hours they must work. Although there is usually a set amount of core hours that must be maintained to complete the work assignment(s), beginning and ending times are flexible. Studies examining the use of flextime have noted improved morale and productivity, and reduced absenteeism, tardiness, and turnover. Additionally, flexible scheduling allows workers to better meet unique transportation needs (e.g., bus scheduling), health needs (e.g., catherization times, medical appointments, counseling sessions), educational needs (e.g., speech, occupational and physical therapies, community skills training), and leisure needs. Finally, flextime allows the worker time to develop social-interpersonal networks outside the work environment.

Permanent part-time employment is employment carried out in less than eight hours per day or 40 hours per week. Seventy-five percent of the workforce with handicaps in the United States work part-time. There are numerous variations possible. Job-sharing is a version of part-time employment, and one that is particularly attractive when dealing with job options for employees with handicaps. Job-sharing requires that a full-time position be restructured into two or more part-time jobs. These part-time jobs may be worked as consecutive shifts or as concurrent shifts in which two employees, for example, collaborate on meeting the responsibilities of the job while working shorter hours. Another variation of

job sharing includes sharing the responsibilities of the job as well as sharing the salary and benefits.

Each of these alternatives have their advantages. Flextime and permanent part-time employment may facilitate better job performance through a combination of shorter work hours and allocation of tasks based on ability and extent of disability. The third variation, job sharing, may open job opportunities that have previously been unavailable due to one person's inability to perform tasks associated with the job. Job sharing allows service providers to mix and match individuals to accomplish job tasks that highlight the competencies of each of the individuals rather than their incompetencies. All instances of job sharing often reduce the need for job restructuring or modification. The following case study provides an example of how flex-time and job sharing has been used.

Case study. Jane and John are completing their education at a local high school. Both students are physically disabled and require motorized wheel chairs. Jane and John are also mildly mentally retarded. Over the past three years both Jane and John have been working in alternative businesses as part of their high school's work experience program. During this period, Jane and John have worked in traditional food service settings, laundry and maid service settings, and various small assembly businesses throughout their local community.

Jane and John have been good workers across a number of jobs. In fact, based upon attendance, social ability, and work performance, Jane and John appeared to show little variation in overall performance across each of the work settings. However, the work experience coordinator collected specific data on work performance at different times during each

day. This coordinator found that Jane worked much better (i.e., faster and more accurately) during the morning hours, whereas John performed better later in the day; both students appeared to slow down and make more errors after they worked for three or four hours. This information coupled with the work experience coordinators knowledge of available jobs allowed the coordinator to identify a job suited for both Jane and John.

Jane and John job share. They work at a local print shop for a total of 30-40 hours a week (15-20 hours each). The positions that they now hold was previously a full-time position held by one person. The work experience coordinator contacted the employer and discussed the possibility of two individuals holding the job, which was agreed upon. The employer indicated that Jane and John could work flexible hours but that they had to check with the supervisor at the end of each day to discuss the print shop's work load the following day.

Allowing Jane and John to work shorter periods of time and to arrange the hours that they worked each day provided benefits to the employer as well as to Jane and John. The employer can structure her time lines to meet her clients' jobs because she has one employee who is willing to work early mornings as well as late mornings; she also has an employee who is willing to work late afternoons-early evenings as well as early afternoons. Jane and John are happy because they can arrange their leisure, transportation, shopping and other daily chores around their shorter work hours. They also like their work.

Summary

Although an authoritative research literature does not exist to better define the influence of organizational ecology on work behavior, some characteristics of organizational ecology have been identified as

being important to assess. These characteristics include the size of the organization and organizational levels; management structure and style; degree of autonomy on the job; staffing ratios and work patterns; and salary levels, benefits, and opportunities for advancement. While few of these variables have been researched with respect to intervention strategies, modification of work patterns has the potential to enhance matches between workers and their jobs.

General Summary

Two premises guided our discussion throughout this chapter. First, there will be less employment turnover if there is a good match between employees and their jobs. Secondly, matches can be enhanced by viewing the workplace from an ecological perspective. The ecological perspective implies that behavior of individuals in physical and social contexts is interrelated and interdependent. If we choose to accept this perspective, then we need to take a broader look at assessment and intervention strategies. That is, rather than only assessing and designing interventions for the individual, we must also begin to assess and design interventions that affect the employment context (e.g., job tasks, supervisors, coworkers), or both the individual and the employment context.

In this chapter, three dimensions to the ecological perspective were discussed: (a) physical ecology, (b) social ecology, and (c) organization ecology. Physical ecology refers primarily to the architectural and physical design of the work setting. Social ecology refers to interactions and interrelationships that exist between individuals and/or groups, and organizational ecology refers to policy and program factors that may influence individual or group behavior. Assessment variables and

possible intervention strategies were introduced for each of the three ecological dimensions.

Although a research literature is beginning to emerge in relation to these ecological dimensions and their impact on maximizing matches between employees and their jobs, much work remains to be done in this area. There should be little doubt, however, that people like Sharon, Jane, and John are assets to their employment communities and, because of their involvement in valued work, they derive important benefits also.

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